

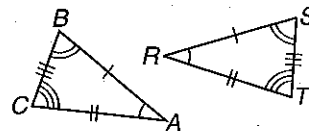
4-3

Study Guide and Intervention

Congruent Triangles

Corresponding Parts of Congruent Triangles

Triangles that have the same size and same shape are **congruent triangles**. Two triangles are congruent if and only if all three pairs of corresponding angles are congruent and all three pairs of corresponding sides are congruent. In the figure, $\triangle ABC \cong \triangle RST$.

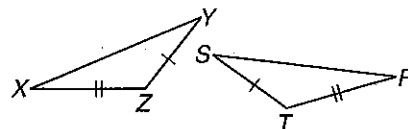


Example

If $\triangle XYZ \cong \triangle RST$, name the pairs of congruent angles and congruent sides.

$$\angle X \cong \angle R, \angle Y \cong \angle S, \angle Z \cong \angle T$$

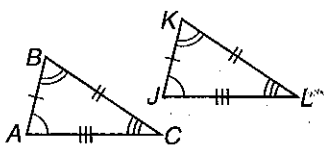
$$\overline{XY} \cong \overline{RS}, \overline{XZ} \cong \overline{RT}, \overline{YZ} \cong \overline{ST}$$



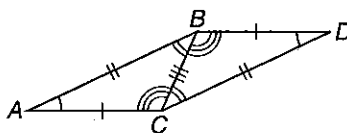
Exercises

Identify the congruent triangles in each figure.

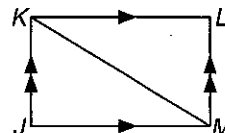
1.



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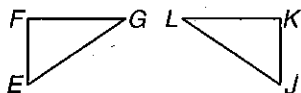


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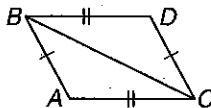


Name the corresponding congruent angles and sides for the congruent triangles.

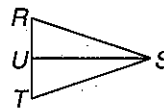
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4-3 Study Guide and Intervention *(continued)*

Congruent Triangles

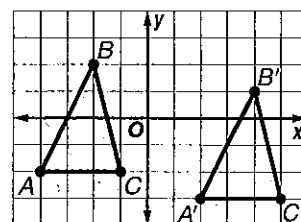
Identify Congruence Transformations If two triangles are congruent, you can slide, flip, or turn one of the triangles and they will still be congruent. These are called **congruence transformations** because they do not change the size or shape of the figure. It is common to use prime symbols to distinguish between an original $\triangle ABC$ and a transformed $\triangle A'B'C'$.

Example Name the congruence transformation that produces $\triangle A'B'C'$ from $\triangle ABC$.

The congruence transformation is a slide.

$$\angle A \cong \angle A'; \angle B \cong \angle B'; \angle C \cong \angle C';$$

$$\overline{AB} \cong \overline{A'B'}; \overline{AC} \cong \overline{A'C'}; \overline{BC} \cong \overline{B'C'}$$



Exercises

Describe the congruence transformation between the two triangles as a *slide*, a *flip*, or a *turn*. Then name the congruent triangles.

